

Doc
u 2
42
y 2 / m

~~UNCLASSIFIED~~

Army Service Forces
Quartermaster Corps
CLIMATIC RESEARCH LABORATORY
Lawrence, Massachusetts

0

CLASSIFICATION CHANGED	
TO	UNCLASSIFIED
AUTH	
DATE	
SECURITY OFFICER	
<i>Frank B. Rogers</i>	

Monthly Report - 1 November 1944

1. The following reports have been sent to the Office of The Quartermaster General for the approval of Col. Georges F. Doriot:

Report No. 121 - 2 October 1944

Uniform, Combat, Winter, Standard and Experimental
Protection against Cold, Wind and Simulated Rain
Ten Tables, Three Figures

The thermal protection provided by three combat uniform assemblies was compared wet and dry in the presence of a light breeze and a moderately strong wind. The outer gear of assembly "A" was the present standard Combat Uniform; that of "B" was similar in design but herringbone twill was substituted for sateen in the field jacket, trousers and hood; the outer gear of assembly "C" was the Armored Force Combat Suit.

The experimental conditions under which the uniforms were studied in the Cold Room were as follows: (1) Uniforms dry, 3.5 mph. wind, plus 20°F. (2) Uniforms dry, 20 mph. wind, plus 20°F. (3) Uniforms wet, 3.5 mph. wind, plus 30°F. (4) Uniforms wet, 15 mph. wind, plus 50°F. Under each of these test conditions the Armored Force Combat Suit provided less thermal protection than the other two assemblies. No real difference could be demonstrated between the sateen and the HBT covered uniforms.

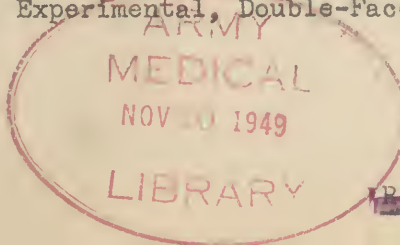
The protection provided by the three assemblies against various intensities of artificial rainfall was studied in the All Weather Chamber. In most of these tests the standard sateen assembly provided better moisture protection than the other two uniforms.

Report No. 113 - 20 October 1944

Mask, Field, Pile, Experimental

A Study of the Comfort, Ease of Fitting, Protection against Cold and General Utility of the Mask, Field, Pile, Experimental Models, and Comparison of them with other Masks.
Nine Tables, Five Figures

Five face masks were included in this study, Mask, Navy; Mask, Field, Chamois, Type I; Mask, Experimental (reclaimed rubber and cotton); Mask, Field, Pile, Type I, Single-Faced, Alpaca-Mohair Pile; Mask, Field, Pile, Experimental, Double-Faced Wool Pile. A few studies were done in the



~~UNCLASSIFIED~~

R E S T R I C T E D

field; the majority were conducted in the wind tunnel of the Cold Room in the laboratory. A variety of ambient conditions was provided. The coldest temperature was minus 40°F., and the greatest wind velocity was 20 mph. In addition to the evaluation of thermal insulation to the face, other factors were investigated which included fit, interference with vision, hearing and movement of the face, moisture condensation, ease of packing and reaction to sterilization by boiling.

The Mask, Field, Chamois was unsatisfactory in most tests. The Navy mask, experimental (reclaimed rubber and cotton), and the Type I pile mask were satisfactory in some respects, unsatisfactory in others. The best mask was judged to be the Mask, Field, Pile, composed of double-faced wool pile with a poplin shell. The mask provided better thermal protection than any other tested. It gave a satisfactory fit and could be worn comfortably by all of the enlisted men available for test by this agency. It did not produce any serious interference with vision or restriction of movements of the face. It did not stand sterilization by boiling.

Report No. 137 - 27 October 1944

Shoe Fit with Socks

Thermal Insulation and Utility

Nine Tables, Two Figures

Thermal protection provided by the Boot, Service, Combat, with various sockgear combinations was studied in the Cold Room and the All Weather Chamber. The study was conducted with varied sock assembly and constant shoe size and shoe size varied to fit over sock assembly. Six sock combinations were included: Socks, Lightweight, Wool, 1 pair; Socks, Wool, Cushion Sole, 1 pair; Socks, Lightweight, Wool, 2 pair; Socks, Lightweight, Wool plus Socks, Wool, Cushion Sole, 1 pair; Socks, Wool, Ski, 1 pair; Socks, Wool, Heavy, 1 pair. Thermal insulation was determined with the sockgear and footgear wet as well as dry. The exposure temperatures were plus 30°F. and plus 45°F.

With the exception of the Socks, Lightweight, Wool, which were usually colder than the other sockgear combinations, there was no real difference between the thermal insulation of the several test items. The sockgear combinations containing more than one pair of socks were not well received and were considered to be less comfortable than the single sock combination. The Socks, Wool, Heavy, appeared to be the most comfortable item for wear in the combat boot in these experiments.

2. The following tests were completed in the Provisional Reports:

No. 142 - Containers, Food

No. 143 - Fuels, Solid, of Enemy Origin

No. 144 - Windshield, Metal, for Outfit, Cooking, One-Burner

No. 146 - Opener, Can, Individual, Modified

R E S T R I C T E D

3. In the Provisional Reports, tests on the following items were discussed:

Moisture Regain of Clothing
Goggles, Cold Weather
Jacket, Field, M-1943, Water-Repellency
Solid Fuels, Metaldehyde
Cases for Bag, Sleeping, Mountain
Aerosol Bombs
Socks, Cushion Sole
Hand Calorimetry
Physical Measurements of Thermal Insulation
Lighter, Individual

JOHN H. TALBOTT
Lt. Col., M. C.
Commanding